

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 14 MAY 2004


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| Applicant's or agent's file reference<br>J3646(C)/ps  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |   |
| International application No.<br>PCT/EP 02/14286  | International filing date ( <i>day/month/year</i> )<br>13.12.2002  | Priority date ( <i>day/month/year</i> )<br>25.01.2002 |
| International Patent Classification (IPC) or both national classification and IPC<br>A61K7/00 |  |   |
| Applicant<br>UNILEVER N.V. et al.   |  |   |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

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|--|---|
| Date of submission of the demand<br><br>13.08.2003   | Date of completion of this report<br><br>12.05.2004                             |
| Name and mailing address of the international preliminary examining authority:<br><br> European Patent Office - Gitschiner Str. 103<br>D-10958 Berlin<br>Tel. +49 30 25901 - 0<br>Fax: +49 30 25901 - 840 | Authorized Officer<br><br>Pelli Wablat, B<br><br>Telephone No. +49 30 25901-335 |



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 02/14286

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-51 as originally filed

**Claims, Numbers**

1-21 received on 07.01.2004 with letter of 23.12.2003

**Drawings, Sheets**

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/EP 02/14286**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

|                               |             |          |
|-------------------------------|-------------|----------|
| Novelty (N)                   | Yes: Claims | yes 1-21 |
|                               | No: Claims  |          |
| Inventive step (IS)           | Yes: Claims | yes 1-21 |
|                               | No: Claims  |          |
| Industrial applicability (IA) | Yes: Claims | yes 1-21 |
|                               | No: Claims  |          |

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

D1: WO-A-98 08601

D2: EP-A-355908

D3: WO-A-95 12988

D4: WO-A-02 36086

D5: EP-A-1 285 588

**1. Novelty Art. 33(2) PCT.**

The subject-matter of the present application refers to a cosmetic or personal care composition (claim 1), comprising gelled particles, wherein at least 50% by volume of the particles have an aspect ratio of at least 5 and a maximum width of 40 micrometers. Independent claims 15 refers to a method of treating hair by using such composition and claim 17 refers to the use of the gelled particles. Claim 18 refers to a process for producing the cosmetic composition.

D1 discloses cosmetic composition comprising hydrogel particles in form of elongated gel noodles having a particle size greater than 25 (preferably greater than 100) micrometers (see page 6, line 7, page 10, line 28 - page 11, line 3). Compositions having 50% of particles with an aspect ratio of 5 and a maximum width of 40 micron are not mentioned by D1

Document D2 describes the manufacture of gelled particles and hair and personal compositions containing them. D2 does not teach that the at least 50% by volume of the gelled particles have an aspect ratio of at least 5 and a maximum width of 40 micrometers.

D3 does not disclose personal care compositions containing gelled particles having the same characteristic as those of claim 1.

Consequently the subject-matter of claim 1-21 is considered to be novel in view of the prior art D1-D3 (Art. 33(2) PCT).

## **2. Inventive Step Art 33(3) PCT**

D1 which is considered to be the closest prior art for the subject-matter of claim 1 discloses hair compositions (see page 26, line 3-6) in which benefit agents are dispersed by the gelled particles having a particle size greater than 25 micrometers and in form of elongated noodles (see page 1, line 23 and page 5, lines 7-10). Claim 1 differs from the disclosure of D1 in that at least 50% of the gelled particles have an aspect ratio of at least 5 and a maximum width of 40 micrometers.

The Applicant has not demonstrated that the distinguishing feature with respect to D1 leads to any technical effect. Consequently the problem to be solved by the subject-matter of claim 1 with respect to D1 can only be considered as the provision of alternative hair care compositions comprising gelled particles.

The solution of the application is to use gelled particles having characteristics as those of claim 1.

There is no suggestion in the prior art which would lead the skilled person to substitute the gelled particles of D1 with gelled particles having a greater aspect ratio ( at least 50% by volume having an aspect ratio of at least 5 and with a maximum width of 40 micrometers).

Consequently the present application fulfills the criterion set forth in Art. 33(3) PCT concerning the inventive step.

CLAIMS

1. Cosmetic or personal care composition comprising:  
gelled particles, wherein the gelled particles comprise  
5 water and ~~at least 80% by volume of the particles have an~~  
~~aspect ratio of at least 2 and a maximum width of 100µm;~~  
and at least one cosmetically acceptable material  
selected from surfactants, hair conditioning agents,  
perfumes or fragrances and hair styling polymers.
- 10 2. ~~Composition as claimed in claim 1, wherein~~ at least 50% by  
volume of the particles have an aspect ratio of at least 5  
and a maximum width of 40µm.
- 15 3. ~~Composition as claimed in claim 1 or claim 2, wherein~~ at  
least 20% by volume of the particles have an aspect ratio  
of at least 10 and a maximum width of 20µm.
- 20 3<sup>2</sup>. Composition as claimed in any one of claims 1 to 2,  
wherein at least 5% by volume of the particles have an  
aspect ratio of at least 50 and a maximum width of 2µm.
- 25 4<sup>3</sup>. Composition as claimed in any one of claims 1 to 3,  
wherein greater than 90% of the particles have a minimum  
width of 0.5µm.
- 5 5<sup>4</sup>. Composition as claimed in any one of claims 1 to 4,  
wherein the gelled particles comprise a gelling polymer.

67. Composition as claimed in claim <sup>5</sup>~~6~~, wherein the gelling polymer is selected from kappa-carrageenan, gellan, gelatin and alginate.

5 78. Composition as claimed in claim <sup>6</sup>~~7~~, wherein the gelling polymer is kappa-carrageenan.

8 9. Composition as claimed in any one of claims 1 to <sup>7</sup>~~8~~, wherein the gelled particles are present in the composition in an amount of from 0.1% to 60% by volume of the composition.

10

9 10. Composition as claimed in any one of claims 1 to <sup>8</sup>~~9~~, which is a hair treatment composition.

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10 11. Composition as claimed in claim 10, which is a shampoo composition comprising from 1% to 50% by weight of one or more surfactants.

20 11 12. Composition as claimed in claim <sup>9</sup>~~10~~, which is a hair conditioning composition comprising from 0.1% to 30% by weight of at one or more hair conditioning agents.

12 13. Composition as claimed in claim <sup>9</sup>~~10~~, which is a hair styling composition comprising from 0.1% to 10% by weight of one or more hair styling polymers.

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13 14. Composition as claimed in any one of claims 1 to <sup>12</sup>~~13~~, wherein the gelled particles comprise a hair benefit agent.

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- 14 15. Composition as claimed in claim <sup>13</sup>14, wherein the hair benefit agent is selected from hair and skin conditioners, hair and skin cleansers, hair fixatives, hair dyes, hair growth promoters, permanent wave compounds, hair relaxers, 5 hair straighteners, antibacterial compounds, antifungal compounds and anti-inflammatory compounds.
- 5 16. Method of treating hair comprising applying to the hair a composition comprising gelled particles comprising 10 water, wherein at least <sup>5</sup>80% by volume of the particles have an aspect ratio of at least <sup>5</sup>2 and a maximum width of ~~100~~ <sup>40</sup> μm.
- 16 17. Method as claimed in Claim 16, wherein the composition 15 is a composition according to any one of Claims 1 to 15.
18. Use of gelled particles comprising water wherein at least 80% by volume of the particles have an aspect ratio of at least 2 and a maximum width of 100 μm in a cosmetic 20 or personal care composition.
19. Use of gelled particles comprising water wherein at least 80% by volume of the particles have an aspect ratio of at least 2 and a maximum width of 100 μm for the 25 delivery of at least one hair benefit agent to the hair.
- 17 20. Use of gelled particles comprising water wherein at least <sup>5</sup>80% by volume of the particles have an aspect ratio of at least <sup>5</sup>2 and a maximum width of ~~100~~ <sup>40</sup> μm for providing 30 textural properties to a cosmetic or personal care composition.



- <sup>18</sup>  
21. Process for producing a cosmetic or personal care composition according to any one of Claims 1 to <sup>14</sup>~~15~~ which comprises forming the gelled particles and then bringing the gelled particles into contact with the at least one cosmetically acceptable material.
- <sup>19</sup>  
22. Process as claimed in Claim <sup>18</sup>~~21~~ wherein the gelled particles are formed by a method comprising the steps of:
- a) mixing two aqueous phases each comprising a polymer, wherein at least one of the polymers is a gelling polymer;
  - b) treating the mixture according to a) such that one of the phases is present in the form of droplets in the second phase;
  - c) subjecting the mixture to shear flow; and
  - d) causing the polymer to gel during or after step (c).
- <sup>20</sup>  
23. Process as claimed in Claim <sup>19</sup>~~22~~ wherein step (c) is carried out in a flow through device, or an array of parallel flow through devices that are adapted to subject the mixture to shear flow.
- <sup>21</sup>  
24. Process for producing a cosmetic or personal care composition according to any one of Claims 1 to <sup>14</sup>~~15~~ that comprises a surfactant, which process comprises forming the gelled particles in the presence of the surfactant.

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